

COMMENTS ON THE NAMES *HETEROTIS* EHRENBERG AND *CLUPISUDIS* SWAINSON, WITH A REQUEST TO PLACE CERTAIN WORKS ATTRIBUTED TO HEMPRICH AND EHRENBERG, 1828, ON THE OFFICIAL INDEX OF REJECTED WORKS IN ZOOLOGY. Z.N.(S.) 1807  
(see vol. 24, pp. 291-293 and vol. 25, pp. 64, 194-195)

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D'Aubenton and Daget (1967, *Bull. zool. Nomencl.* 24 : 291-293) have requested the International Commission on Zoological Nomenclature to place the generic names *Heterotis* Ehrenberg and *Clupisudis* Swainson on the Official List of Generic Names in Zoology. I maintain that *Clupisudis* Swainson is a subjective synonym of *Heterotis* Ehrenberg instead of a replacement name for *Sudis* Cuvier. Further, Roellig (1969, *Bull. zool. Nomencl.* 25 : 194-195) has called attention to two sets of printed plates by Hemprich and Ehrenberg, dated 1828. These plates, a copy of each set in the library of the American Museum of Natural History, have been considered unpublished by many workers.

In agreement with d'Aubenton and Daget, the genus name *Heterotis* Ehrenberg should be placed on the Official List of Generic Names in Zoology and its type species, *niloticus*, as published in the combination *Sudis niloticus* Ehrenberg in Cuvier (1829, *Regne Animal* 2 : 328) should be placed on the Official List of Specific Names in Zoology. Rüppell (*Beschreibung und Abbildung mehrerer neuer Fische, im Nil entdeckt* : 10, pl. 3, fig. 2) also described *Sudis niloticus* in 1829, but that work appeared several months after the volume by Cuvier. I suspect that *Heterotis* Ehrenberg in this work (Rüppell, 1829, p. 10, footnote) is actually publication in synonymy. Ehrenberg (*Abhandlungen der Königl. Akad. Wiss., Berlin, for 1834* (1836) : 532) used the name "*Heterotis nilotica*" but gave no description or synonymy. Most subsequent writers have used *Heterotis* Ehrenberg and recognized it as monotypic, containing only the species *Heterotis niloticus* (Ehrenberg). To recognize *Heterotis* as dating from 1828 in works of Ehrenberg's that have generally been considered unpublished would require a number of nomenclatorial changes in fishes and mammals by creating senior synonyms not previously recognized.

The name *Arapaima* Müller, 1843, has been in long and continued use as the genus name for *Sudis gigas* (auct.). To fix *Sudis gigas* Schinz as the type-species of *Clupisudis* Swainson, 1839, would be nomenclatorially incorrect and would replace a long-known generic name with an unused name. Swainson (1839, *The Natural History of Fishes* . . . 2 : 185 and 286) gave contrasting characters for *Sudis* Cuvier and his own *Clupisudis*. Accompanying the name *Sudis*, Swainson listed only "*S. gigas* Cuvier". The sole species listed for *Clupisudis* by Swainson is "*C. niloticus*. Rüpp. Fish of the Nile, i. pl. 3. f. 2."

*Sudis niloticus* Rüppell, 1829, is a subjective synonym of *Sudis niloticus* Ehrenberg in Cuvier, 1829. *Clupisudis* is thus a synonym of *Heterotis* Ehrenberg instead of *Sudis* Cuvier.

I do not see that it is necessary to fix family names for this group of fishes, but if so, I point out that Gill (1893, *Memoirs National Academy of Sciences* 6 : 130) indicated "Heterotididae (Cope, 1871)" based on the genus *Heterotis* Ehrenberg, for a family of osteoglossoid fishes.

Of great concern to working ichthyologists is that Roellig maintains that Ehrenberg's plates consisting of the *Descriptiones Piscium* and the *Descriptiones Zootomiorum* portions of the *Symbalae Physicae* . . . (often cited as Hemprich and Ehrenberg) were first published in 1828 instead of 1899. I have examined the sets in the American Museum of Natural History library and they are as Roellig indicated. The ten plates in each set are unbound and lack accompanying descriptive text. The title for each set and a list of the contained plates is printed only on the carton which contains the plates and bears in both cases the date 1828. The ten plates of fishes

include coloured figures of 26 different fishes, each with an adequately latinized name printed on the plate. The ten plates in the *Zootomicrorum* depict anatomical structures of mammals and fishes. The names printed on the latter plates sometimes vary from spellings given in the *Descriptiones Piscium* and from names later published by Ehrenberg for the mammals, or are vernacular. Not one of the new names in these two works has been listed in the existing literature as Ehrenberg, 1828. Several workers throughout the years have either had access to the plates or Ehrenberg's manuscripts and published the names in synonymy as Ehrenberg and/or *Symbolae Physicae* inedit. These plates are quite similar in size and content to those issued in 1899 by a team of authors.

Some of the mammal names on the plates of the *Descriptiones Zootomicrorum* predate 1828; others were included, often with changes of spelling, in the *Descriptiones Mammalium* portion of the *Symbolae Physicae*, *Decas Prima* and *Decas Secunda*. The cover and title page to *Decas Prima* of the mammal work are dated 1828 and the introduction bears the imprint October 1828; the descriptive portion is imprinted August 1832. *Decas Secunda* has imprints on various text pages September through November 1832, but the cover is dated 1830. Mammalogists have generally recognized the two parts as published in 1832 or 1833. It seems unlikely that the plates were distributed before the text although they must have been printed some two to four years previously.

About nine of the twenty-six fish species names on the plates of the two works are apparent junior synonyms of previously described species. The others would be senior to names accompanying later descriptions, that were in several cases based on Hemprich and Ehrenberg's specimens or illustrations. According to Stresemann (*Abhandlungen Akad. Wiss. Berlin*, 1954, Nr. 1 : 161) the specimens of sharks and rays were studied by Müller and Henle (*Systematische Beschreibung der Plagiotomen*, Berlin, 1841) and the illustrations and Ehrenberg's manuscripts on the remaining fishes were used by Cuvier and Valenciennes (*Histoire Naturelle des Poissons*, 22 vols., Paris, 1828-1849).

The plates in the *Descriptiones Piscium* have been indicated as unpublished, prior to 1899, by a number of authors in major works, e.g. Klunzinger (1870-1871, *Synopsis der Fische des Rothen Meeres* : 468, 471, 475, 489, 655, 661, 666; 1884, *Die Fische des Rothen Meeres* : 74, 122); Müller and Henle (*loc. cit.*, 1841, p. 187); Günther (1870, *Catalogue of the Fishes in the British Museum* 8 : 498). Fowler (1956, *Fishes of the Red Sea and Southern Arabia* 1 : 14, 17, 18, 22, 23, 24, 26, 29, 30, 47) cited Ehrenberg's fish plates as first published by Hilgendorf in 1899 and listed some of Ehrenberg's names, as printed on the plates, with dates from Klunzinger and other authors subsequent to 1828—which were generally published in synonymy. Rüppell, one of the leading workers of the era, complained (1838, *Neue Wirbelthiere zu der Fauna von Abyssinien gehörig, Fische* : 134) that he was unable to obtain copies of the plates from the authorities in Berlin and suggested that they were made available only to Cuvier.

Müller and Henle (*loc. cit.*), who studied Hemprich and Ehrenberg's specimens of elasmobranch fishes, did not cite any of the thirteen species names and one new genus name that were printed on the plates and evidently had not seen the plates as they were not listed.

Aside from Dean (1923, *A Bibliography of Fishes* 3 : 55), who had access to the American Museum library, I have been unable to find the two works listed in any bibliography or catalogue of American and European libraries available to me.

Cuvier and Valenciennes (*loc. cit.* 1 : 261; also Stresemann, *loc. cit.*) had many of Ehrenberg's illustrations and at least some of his manuscripts. They frequently refer in their descriptions to other paintings and drawings, that were prepared for Ehrenberg, list his descriptive data, and credit Ehrenberg with names that were not on the printed plates. They apparently are the only workers who indicated the work as published, stating (vol. 11, p. 279), in reference to plate IX of the fishes, "Nous adopterions pour nom générique celui que M. Ehrenberg a publié, . . ." In no case throughout their work did they mention the *Symbolae Physicae* by name, suggesting

that they had only the plates; references were given simply as Ehrenberg's plate and figure number or "Zool." or "Pisces" plate and figure number. Of the names printed on the plates, one of Ehrenberg's species names and the genus name *Heterotis* were used by them and credited to Ehrenberg; three generic names and five species names are otherwise mentioned, usually as synonyms of their own new names or older names; one species name was not credited to Ehrenberg, and several new species names and one new genus name were omitted.

Most likely the plates were printed in 1828, as were some of the mammal plates, but were held for Ehrenberg's descriptive text which never appeared. I have found no evidence that the plates were distributed (published). Since Cuvier and Valenciennes had seen copies of the printed plates, they believed them published. In 1899, a team of writers (Carlgren, Hilgendorf, Martens, Matschie, Tornier, and Weltner) published the plates of Pisces and the Zootomicrorum, plus others, of the work as *Symbolae Physicae seu Icones Ineditae* . . . Although apparently not distributed in 1828, it is probable that a number of copies of the plates got into unofficial circulation between that date and 1899; some may now be in other libraries to trouble future workers.

To recognize these works as published in the sense of Chapter III of the International Code of Zoological Nomenclature at this date would require zoologists to reconsider a number of names not currently in use, for example *Carcharias forskalii*, *Lamna ecarinata*, *Labrus radiatus*, *Cryptocentrus fasciatus*, *Priolepis auriga*, etc. *Cephaloptera stelligera* would replace *Ceratoptera ehrenbergii* Müller and Henle, 1841; *Oplopomus pulcher* would replace *Gobius oplopomus* Cuvier and Valenciennes, 1837; *Zygaena erythraea* predates *Sphyrna mokarran* (Rüppell, 1838) and *Sphyrna lewini* (Griffith and Smith, 1834), and would replace one of the two names, as judged from the revision of Gilbert (1967, *Proc. U.S. Nat. Mus.* 119, no. 3539).

In the interest of stability of nomenclature, I request the International Commission on Zoological Nomenclature to place the two following works on the Official Index of Rejected Works in Zoology:

1. *Symbolae Physicae seu Icones et Descriptiones Piscium qui ex itinere per Africam Borealem et Asiam Occidentalem—Friderici Guilelmi Hemprich et Christiani Godofredi Ehrenberg, Medicinae et Chirurgiae Doctorum—Studio Novi aut Illustrati Redierunt—Percensuit et Regis Jussu et Impensis—edidit Dr. C. G. Ehrenberg. Decas Prima. Berolini ex Officina Academica—Venditur a Mittlero. MDCCCXXVIII. 10 pls.*
2. *SYMBOLAE PHYSICAE SEU ICONES ET DESCRIPTIONES ZOOTOMICRORUM que ex itinere per AFRICAM BOREALEM ET ASIAM OCCIDENTALEM—FRIDERICI GUILIELMI HEMPRICH ET CHRISTIANI GODOFREDI EHRENBURG, Medicinae et Chirurgiae Doctorum—Studio Novi Aut Illustrati Redierunt—Percensuit et Regis Jussu et Impensis—Edidit Dr. C. G. Ehrenberg—Decas Prima—Berolini ex Officina Academica—Venditur a Mittlero. MDCCCXXVIII. 10 pls.*